

FIG 1

100

Symbol	Name	Description
→	A2A Link	Medium-range communication (< 5 meters) that requires an active transmitter and an active receiver.
→	A2P Link	Short-range communication (< 3 meters) that requires an active transmitter and a passive receiver (diode detector). The wake-up signals to activate a SP or SA node are transmitted in this link before the data.
→	MBS Link	Short-range communication that requires an active transmitter (to provide the Ether), a passive transmitter (MBS) and an active receiver.
~~~~	Ether	Electromagnetic field generated by a PU to provide the signal necessary to be used by the passive transmitters (MBS).
→→	Long Link	Long-range communication (> 5 meters) that links Polling Units by using a Bridge.

FIG 2

200 ↘

		Link type and data flow direction							
		PU → SA	PU → PU	SA → SA	PU ← SA	PU → SP	PU ← SP	SA → SP	
Node	Comm. Units	A2P	A2A	A2A	MBS	A2P	MBS	A2P	
PU	Active Tx	✓	✓			✓			
	Active Rx		✓		✓	✓	✓		
	Ether Provider				✓		✓		
	Wake-up Whistle	✓			✓	✓			
SA	Active Tx		✓	✓			✓		
	Passive Rx	✓		✓					
	Passive Tx				✓				
	Wake-up Whistle			✓			✓		
	Wake-up Listener	✓			✓				
SP	Passive Tx					✓		✓	
	Wake-up Listener					✓		✓	

FIG 3

300

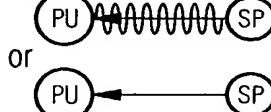
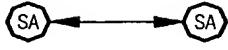
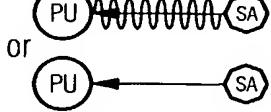
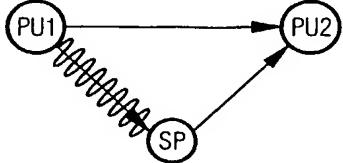
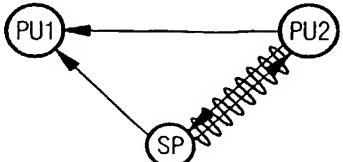
Link	Range	Type of Data	Communication Units	Graphical Representation
PU→SP (A2P)	Short	Configuration and operation data. Activation messages (wake up).	PU: Active Tx PU: Wake-up Wh. SP: Passive Rx SP: Wake-up L.	
PU←SP (MBS)	Short	Sensor data. Identification data.	PU: Ether provider PU: Active Rx SP: Passive Tx	
PU↔PU (A2A)	Medium	Network management messages. Sensor data.	PU: Active Tx PU: Active Rx	
PU→SA (A2P)	Short	Configuration and operation data. Activation messages (wake up). Sensor data	PU: Active Tx PU: Wake-up W. SA: Passive Rx SA: Wake-up L.	
SA↔SA (A2P)	Short	Activation messages (wake up). Sensor data.	SA1: Active Tx SA1: Wake-up W. SA2: Passive Rx SA2: Wake-up L.	
SA→SP (A2P)	Short	Configuration and operation data. Activation messages (wake up).	SA: Active Tx SA: Wake-up W. SP: Passive Rx SP: Wake-up L.	
SA→PU (A2A)	Medium	Sensor data. Identifikacion data.	SA: Active Tx PU: Active Rx	
SA→PU (MBS)	Short	Sensor data. Identifikacion data.	PU: Ether provider PU: Active Rx SA: Passive Tx	
SP→PU (MBS)	Short	Sensor data. Identifikacion data.	PU: Wake-up W. PU1: Ether provider PU2: Active Rx PU1: Active Tx SP: Passive Rx SP: Wake-up L. SP: Passive Tx	
SP→PU (MBS)	Short	Sensor data. Identifikacion data.	PU2: Wake-up W. PU2: Ether provider PU2: Active Rx PU2: Active Tx PU1: Active Rx SP: Passive Rx SP: Wake-up L. SP: Passive Tx	

FIG 4-1

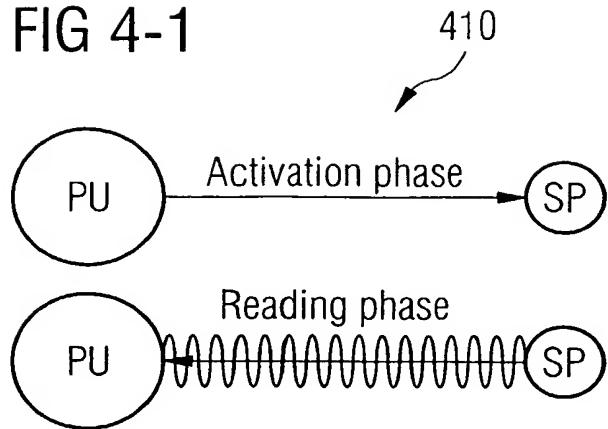


FIG 4-2

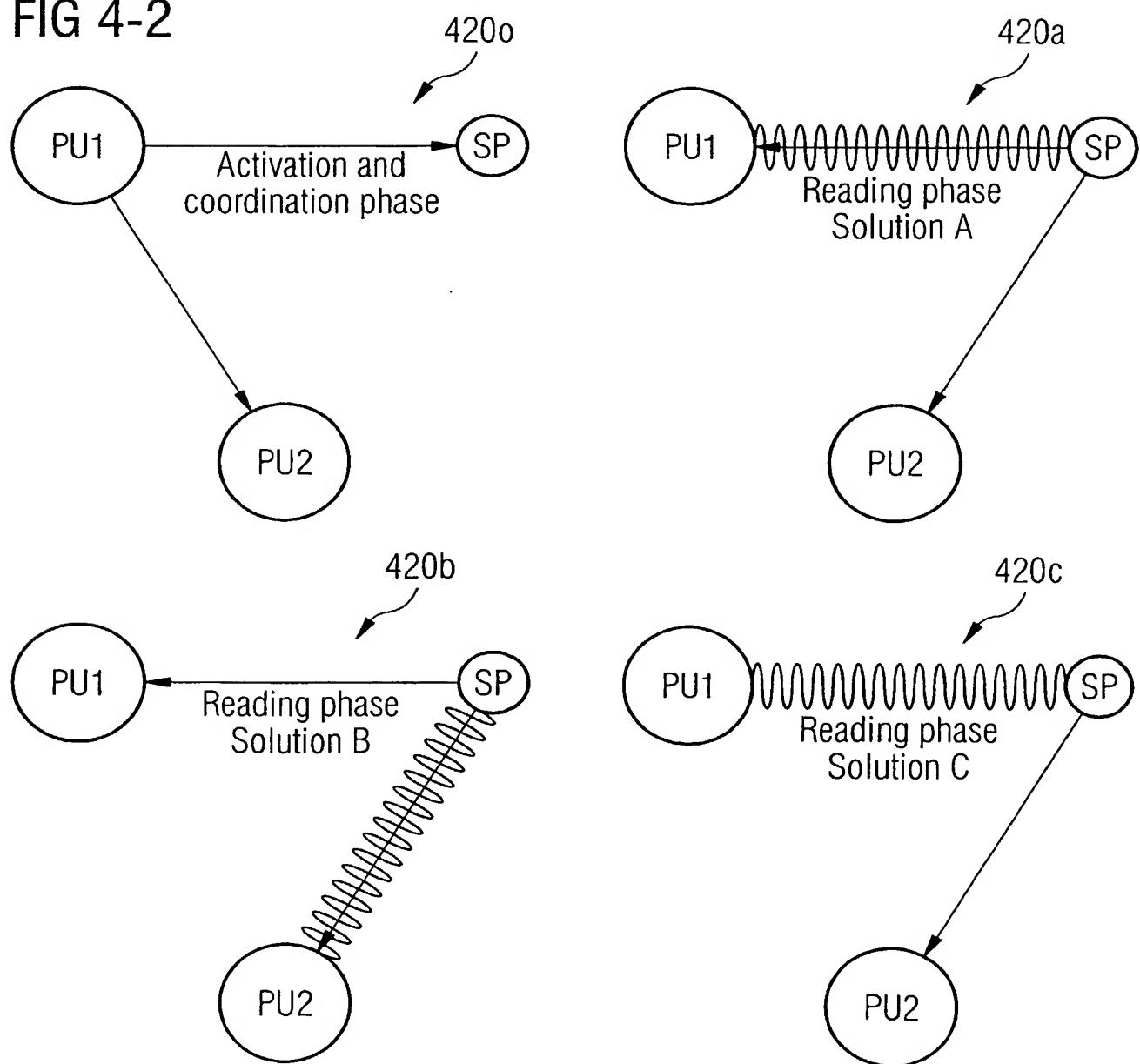


FIG 4-3

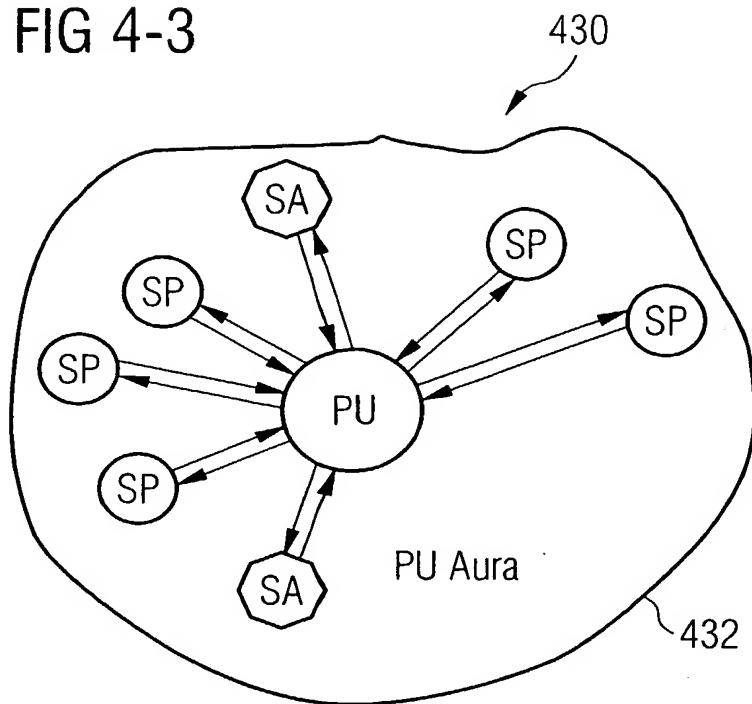


FIG 4-4

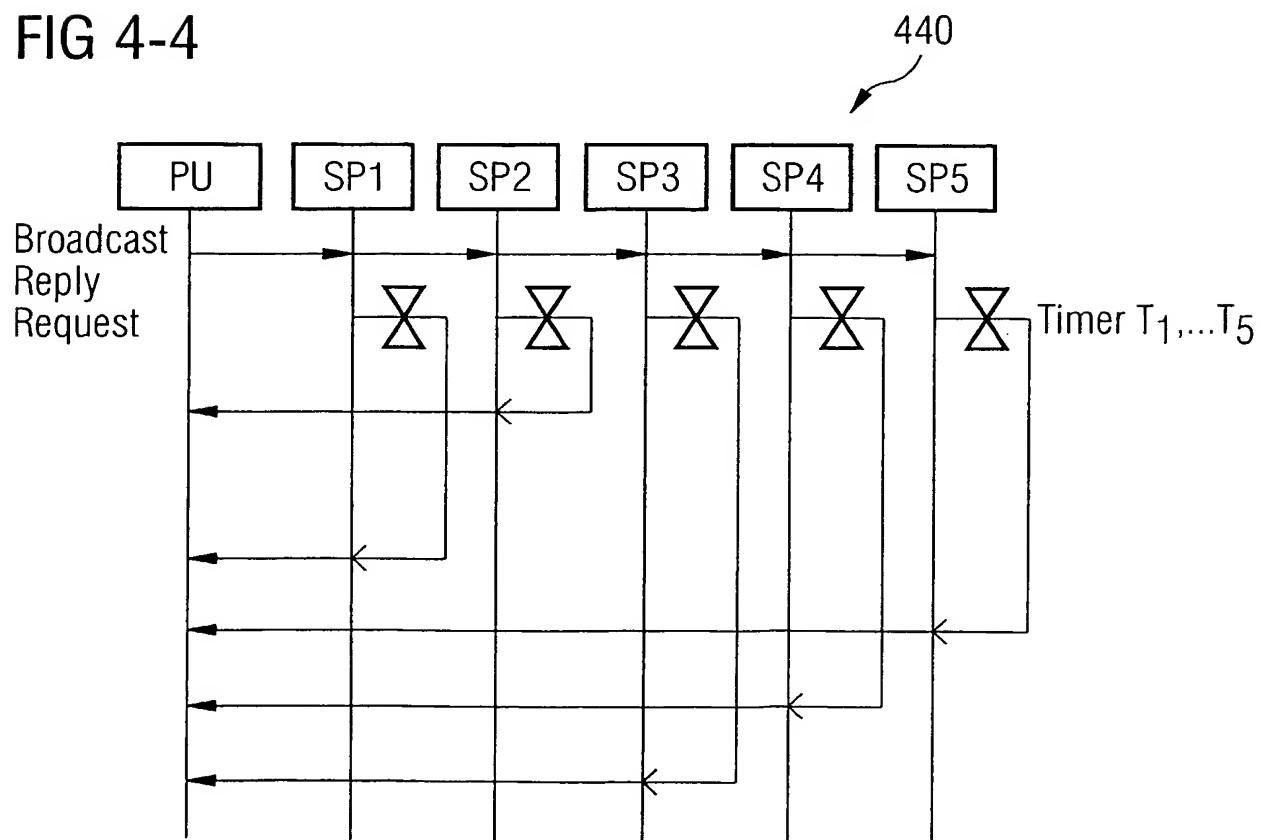


FIG 4-5

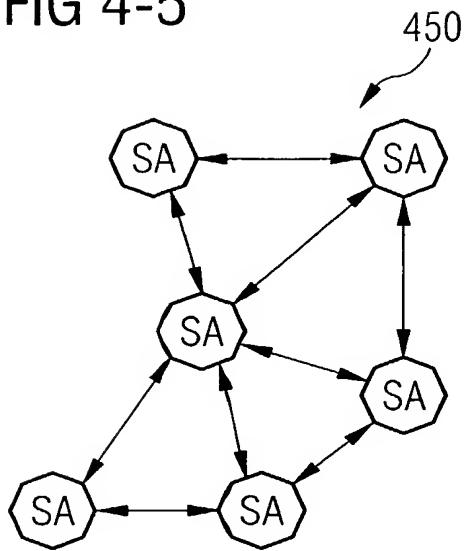


FIG 4-6

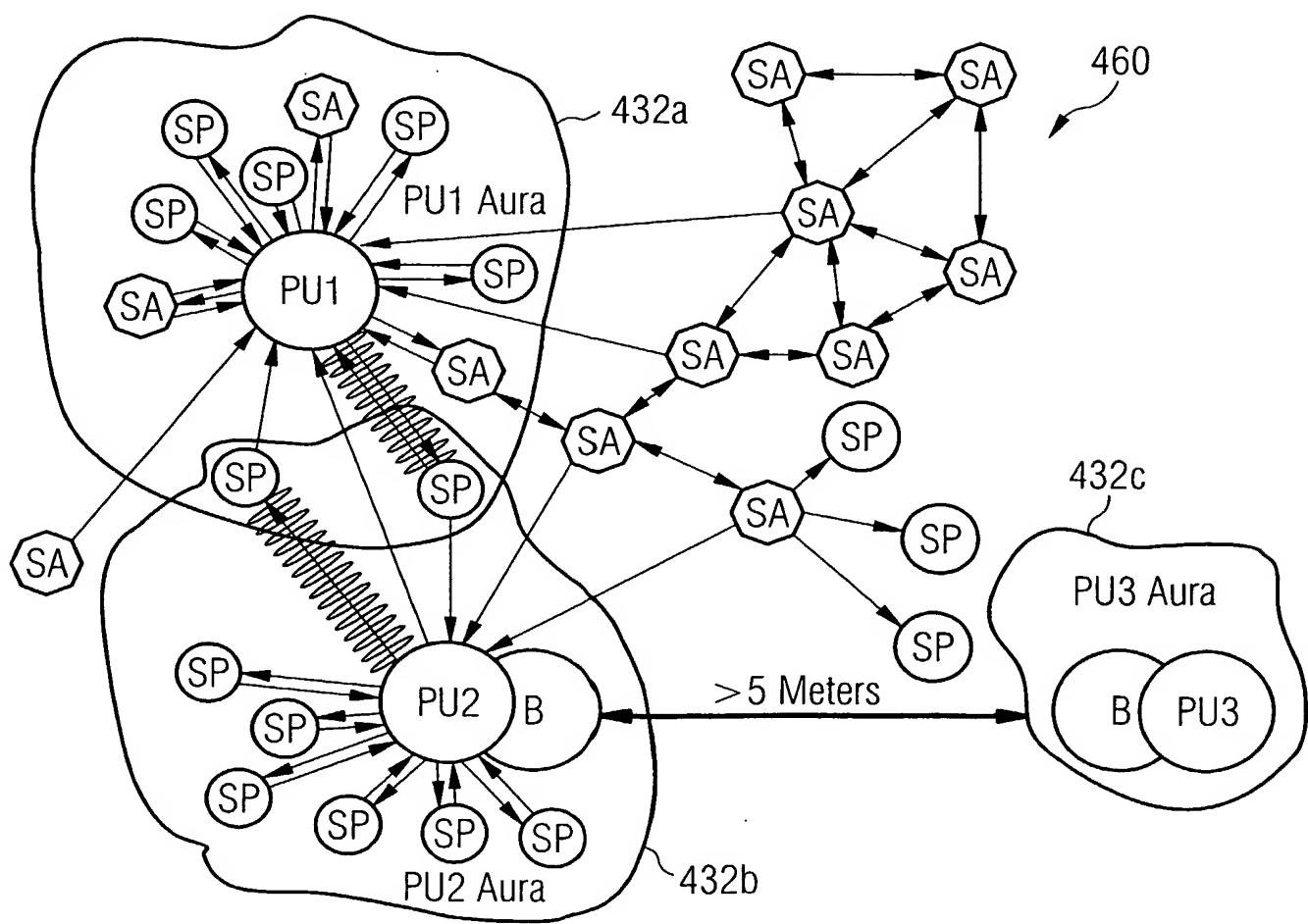


FIG 4-7

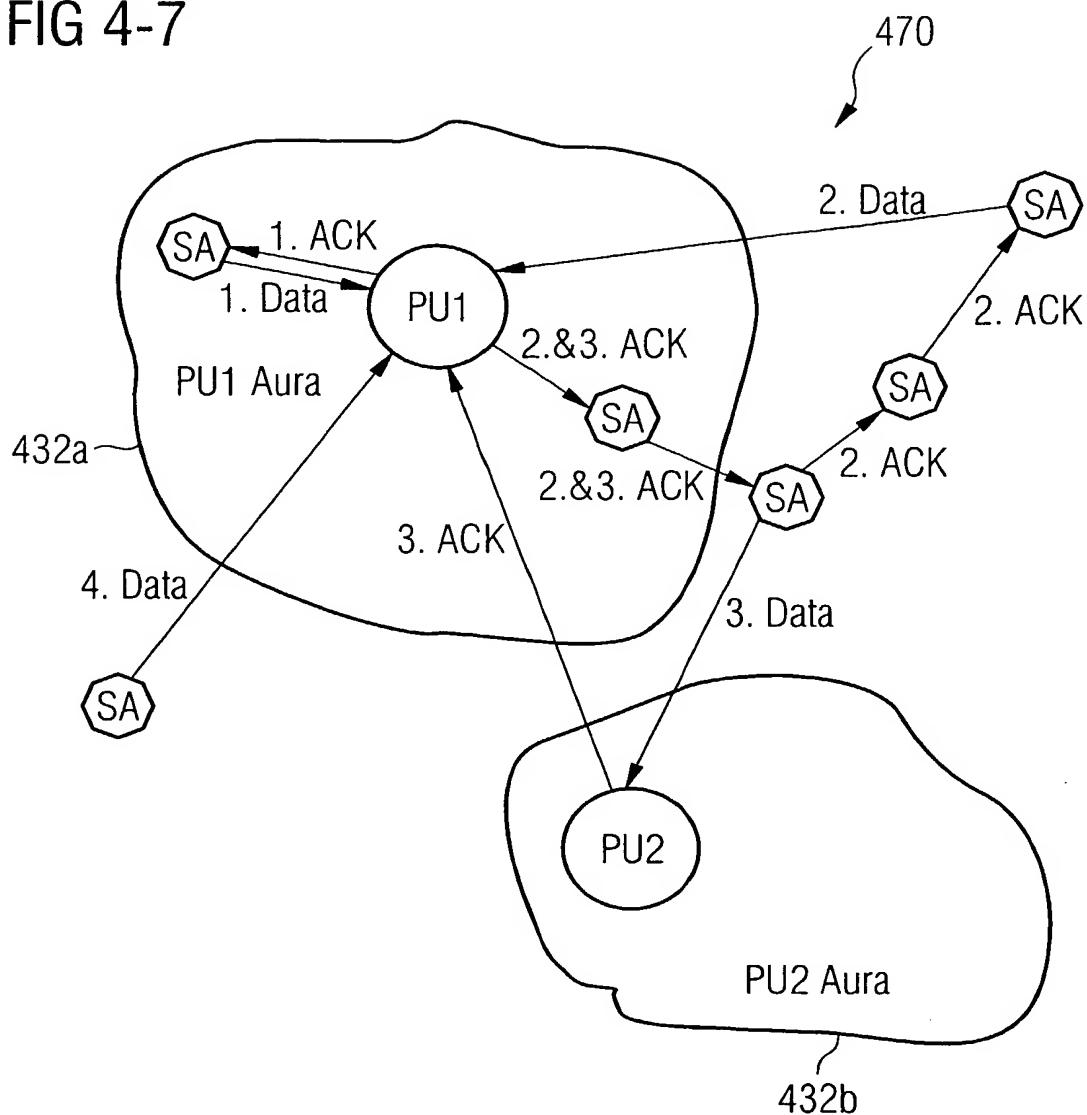


FIG 4-8

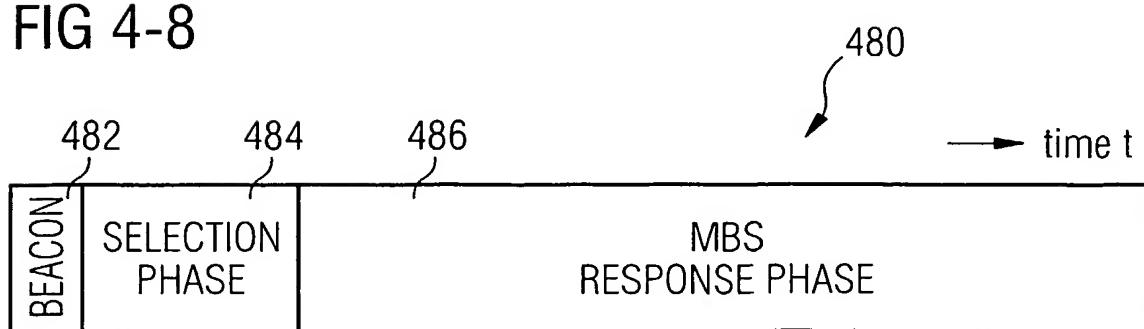


FIG 4-9

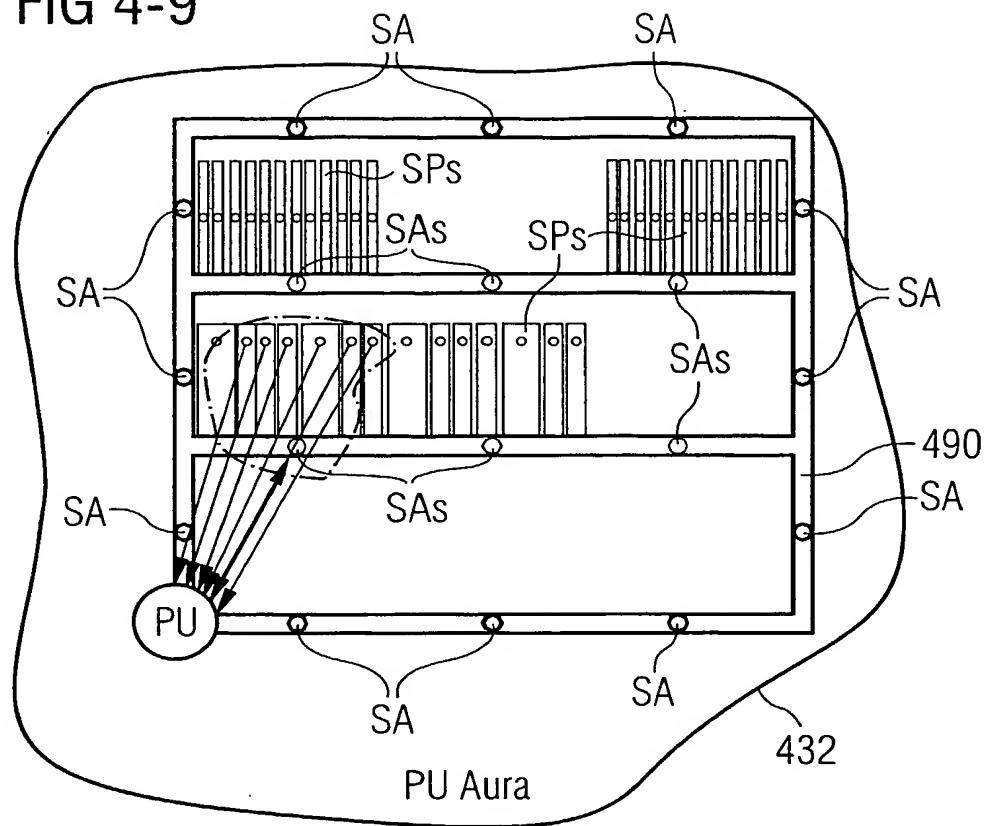


FIG 4-10

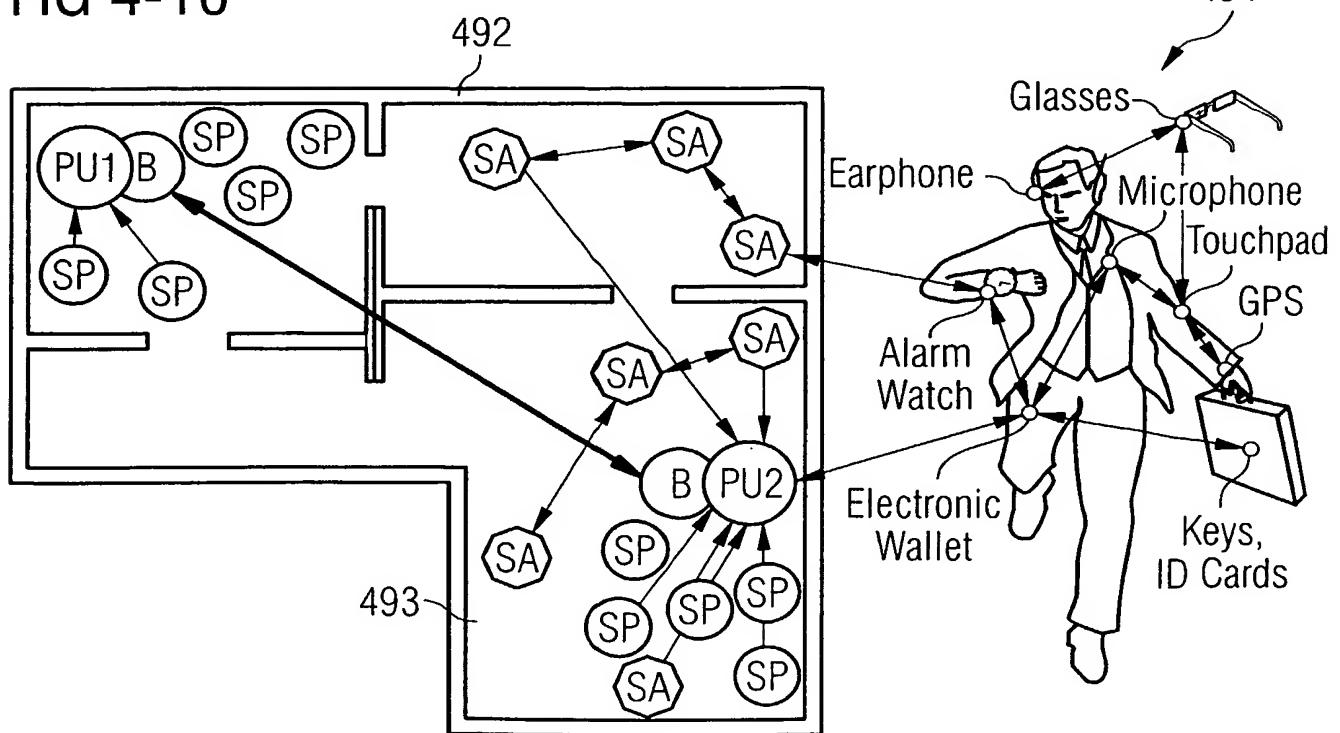


FIG 5-1

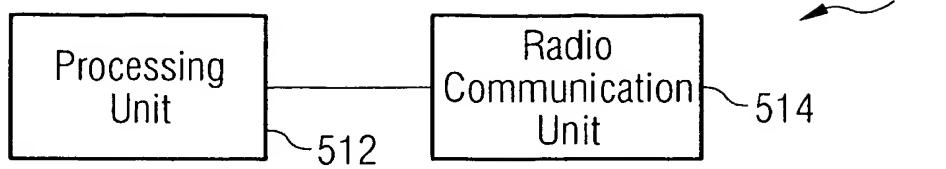


FIG 5-2

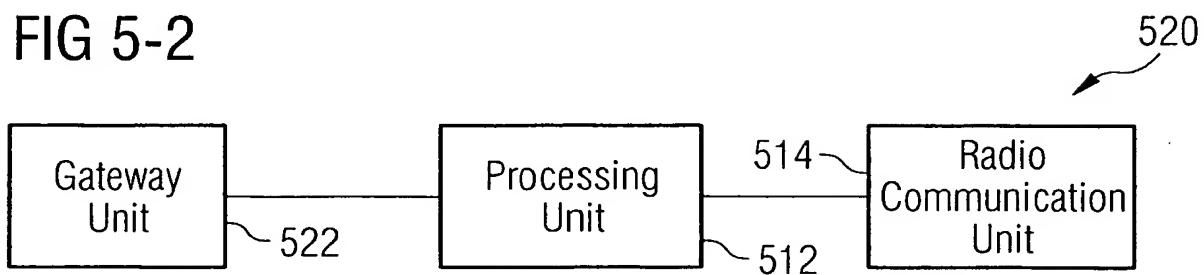


FIG 5-3

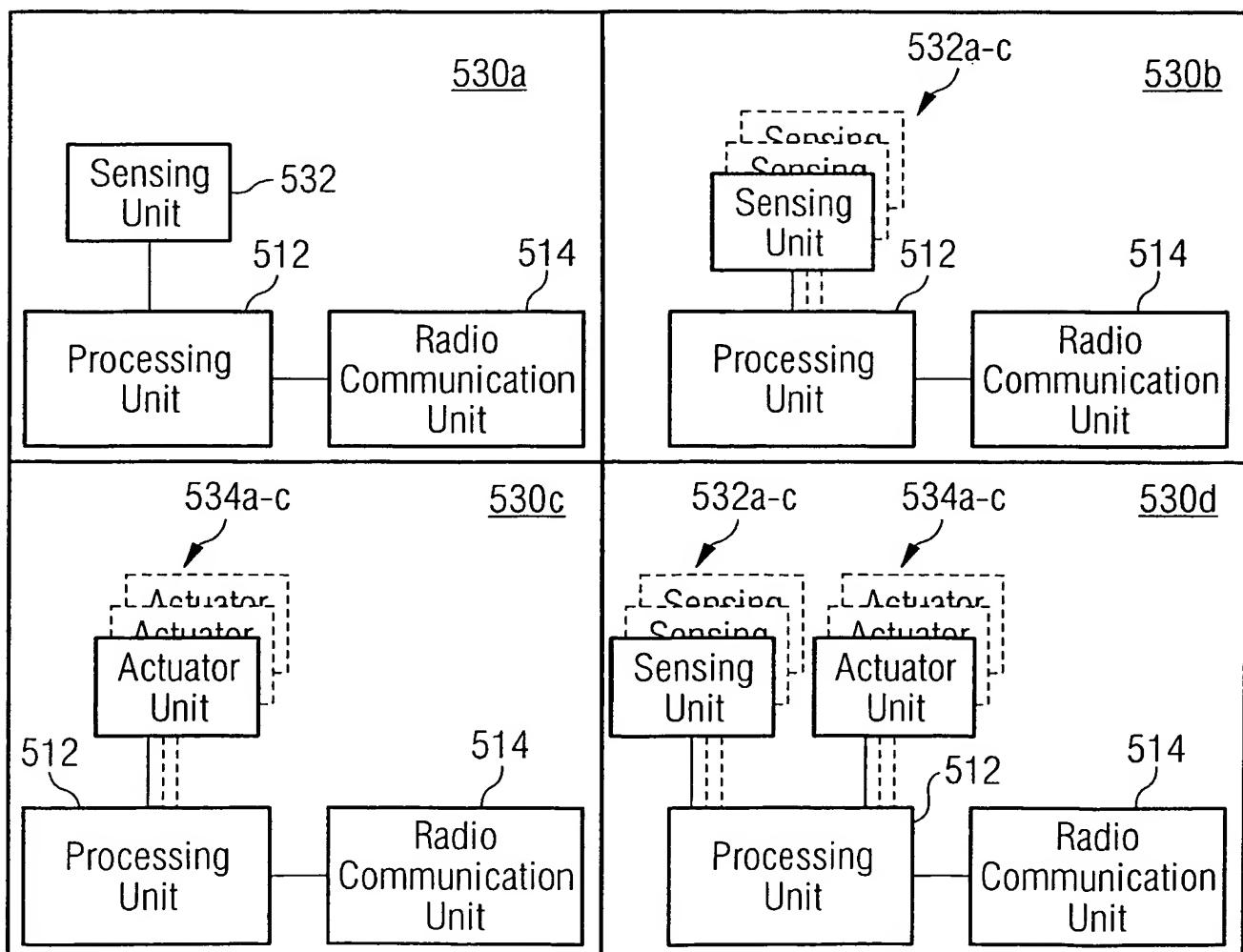


FIG 5-4

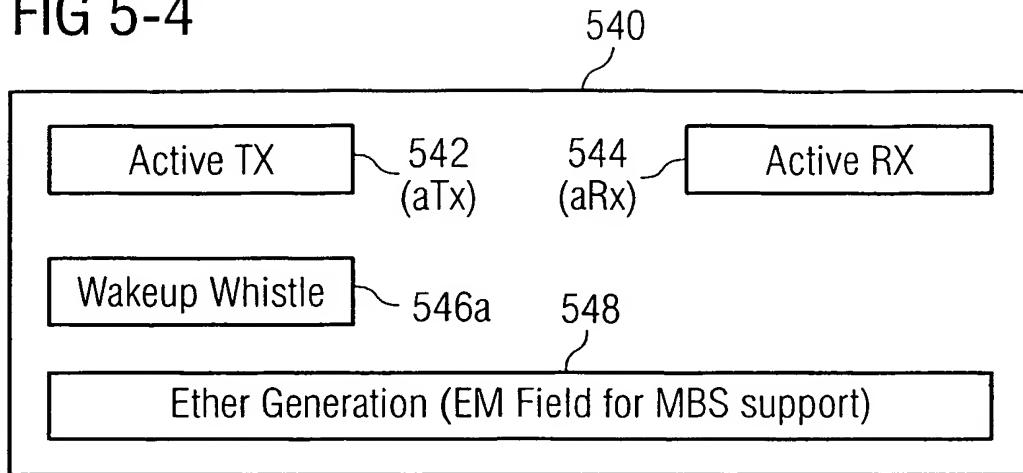


FIG 5-5

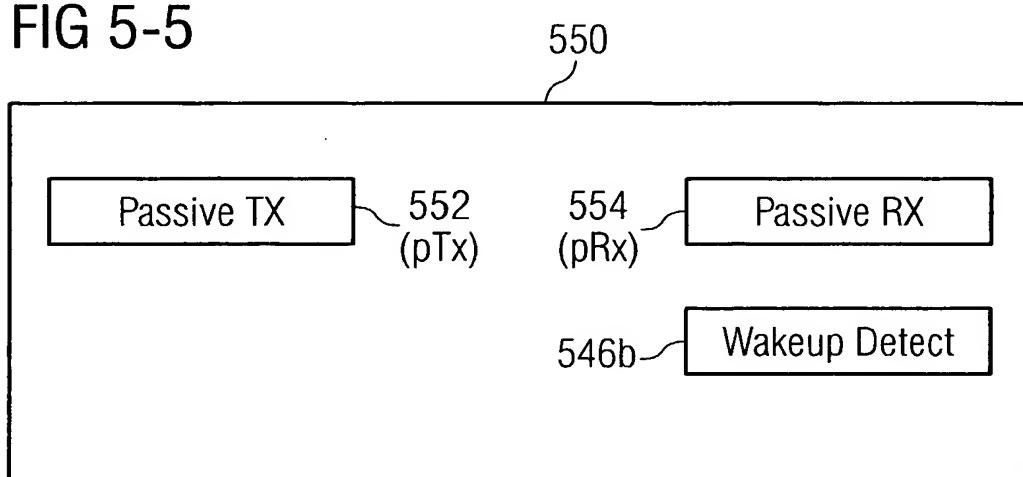


FIG 5-6

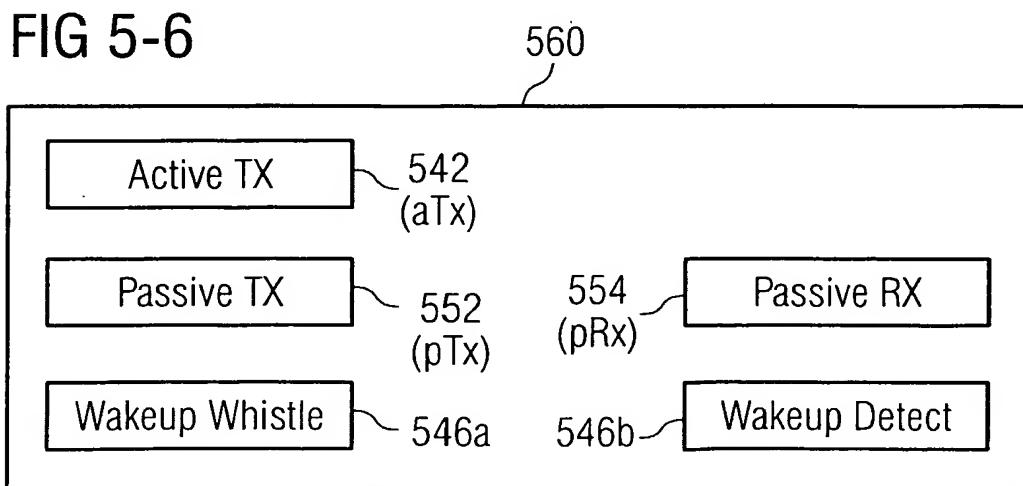


FIG 5-7



FIG 5-8

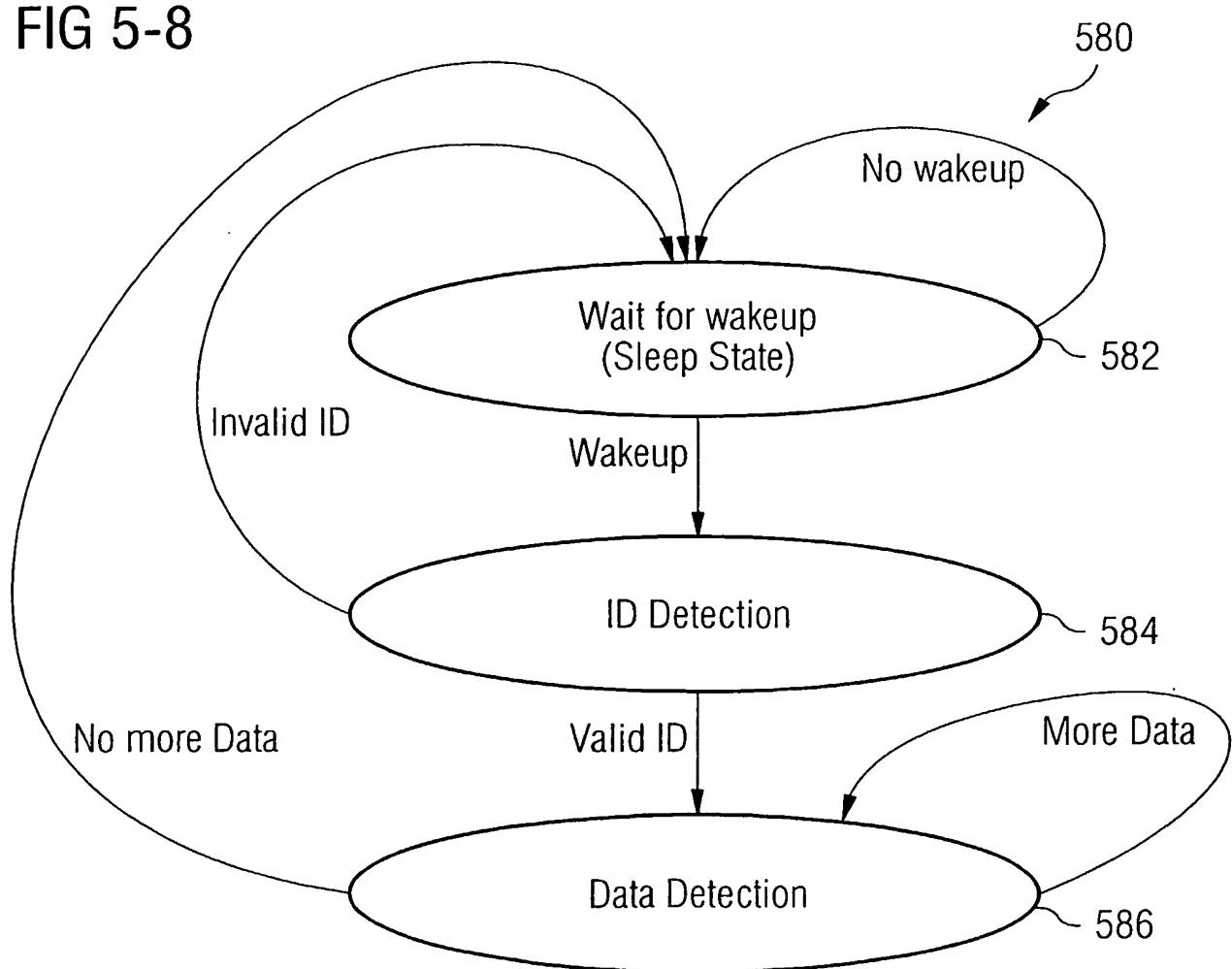


FIG 6-1

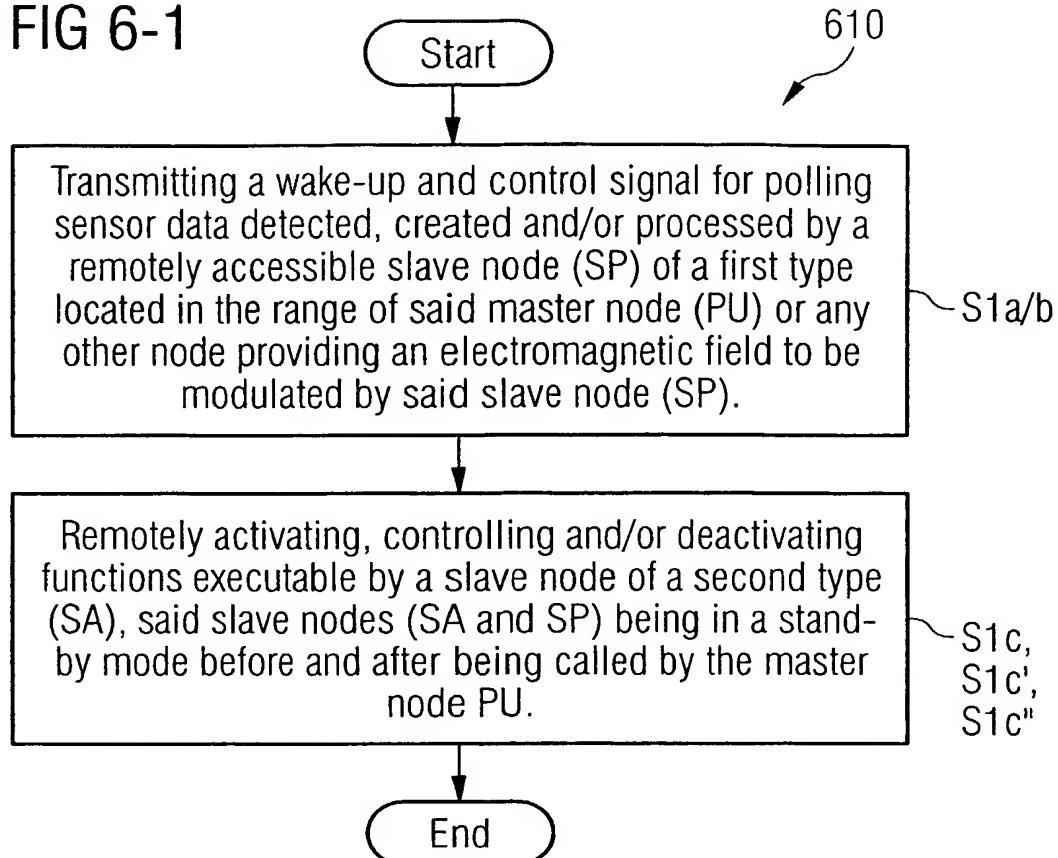


FIG 6-2

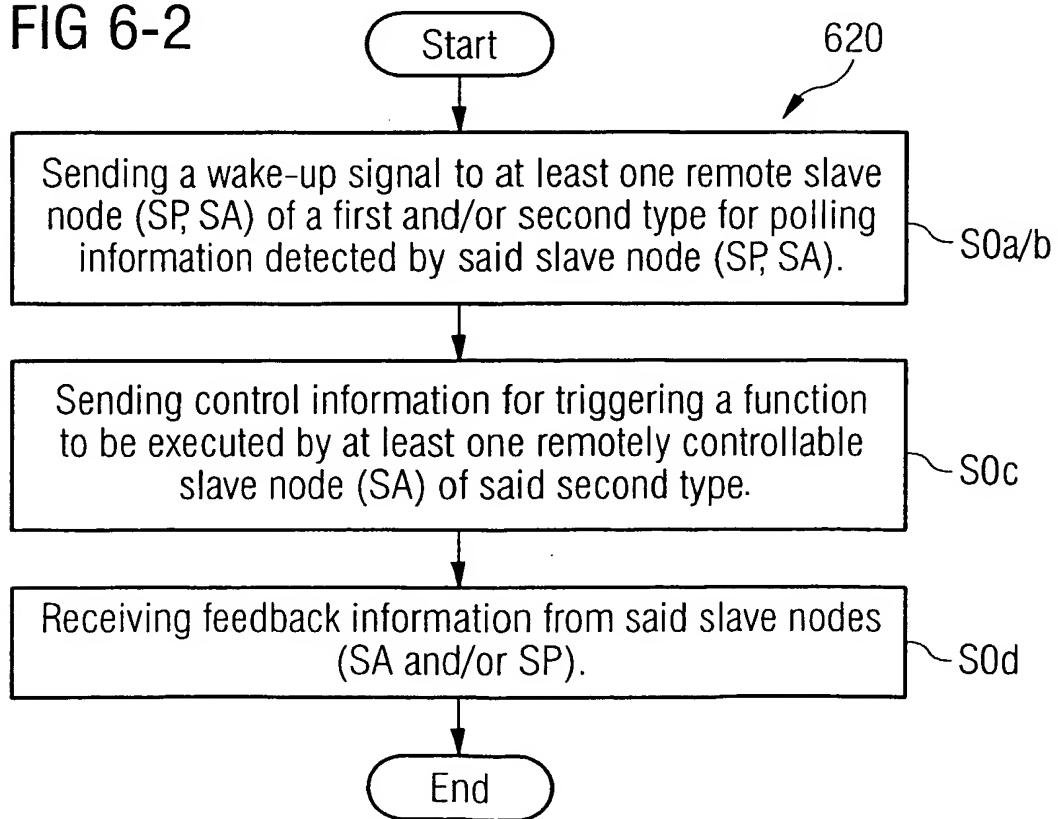


FIG 6-3

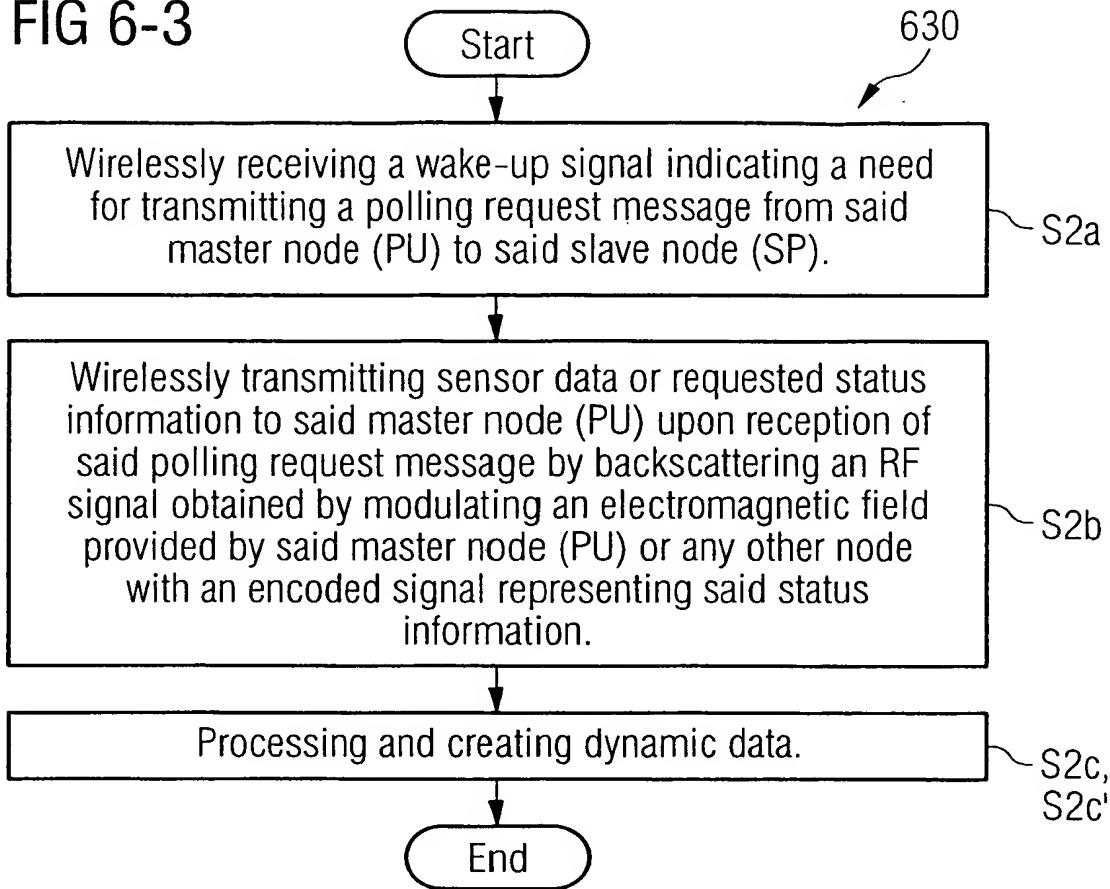


FIG 6-4a

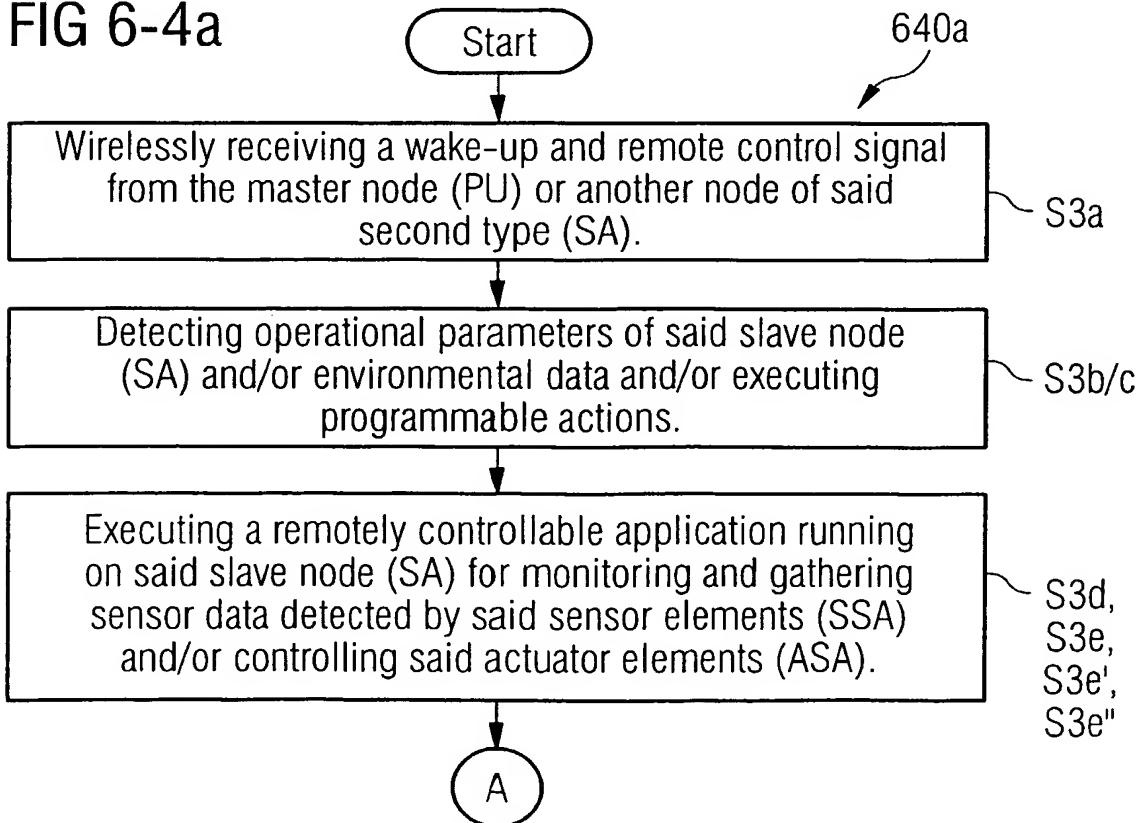


FIG 6-4b

